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Exercises Quantitative Methods

Worksheet: Kruskal-Wallsi Test

Exercise 10.1 (cf. Bereson et al., page 580)
The *Wall Street Journal* has conducted a stock-picking contest. The lats one was conducted in March 2001. In this experiment, three different methods were used to select stocks that were expected to perform well during the next five months. First group: Four Wall Street professionals, considered experts on picki8ng stocks, each selected one stock. Second group: Four randomly chosen readers of the *Wall Street Journal* each selected one stock. Third group: Four stocks were selected by flying darts at a table containing a list of stocks.

The returns of the selected stocks for March 20,2001, to August 31, 2001, (in percentage return), are given in the following table:

Experts	Readers	Darts
+39.5	−31.0	+39.0
−1.1	−20.7	+31.9
−4.5	−45.0	+14.1
−8.0	−73.3	+5.4

Is there evidence of a significant difference in the median return for the three groups?

Exercise 10.2 (cf. Berenson et al., page 581)
The following data represent the US-nationwide highest yield of different types of accounts in 2007:

Money Market	Six-Month CD	One Year CD	2.5-Year CD	Five-Year CD
5.21	5.50	5.41	5.35	5.35
5.19	5.44	5.40	5.25	5.30
5.20	5.40	5.40	5.20	5.25
5.16	5.40	5.40	5.20	5.25
5.12	5.39	5.39	5.15	5.22

At the 0.05 level of significance, is there evidence of a difference in the median yields of the different accounts?

Solution of exercise 10.1
The medians are: -2.8 Experts, -38.0 Readers, 23.0 Darts.

The p-value of the Kruskal-Wallis test is 0.025, it is we reject the null hypothesis of equal medians, i.e. the medians differ significantly in the three groups.

Solution of exercise 10.2
The medians are: 5.19 Money Market, 5.40 Six-Month CD, 5.40 One-Year CD, 5.20 2.5-Year CD, 5.25 Five-Year CD.

The p-value of the Kruskal-Wallis test is 0.001, it is we reject the null hypothesis of equal medians, i.e. the medians of the five accounts differ significantly.